





## COMMENT CARD

## South Delta Improvements Program

Date: OCTOBER 29, 2002

Thank you for attending today's meeting and participating in the scoping process for the South Delta Improvements Program. The purpose of the scoping process is to seek early public input regarding alternatives, concerns and issues to be addressed in the Environmental Impact Report (EIR) and Environmental Impact Statement (EIS). The scoping process also helps to identify project impacts, alternatives, mitigation measures, and environmental subject areas to be addressed.

Name: BOB GROVES (please print) Title (if applicable): N/A  
Telephone: (510) 793-9283 Fax: N/A  
Organization/Business (if applicable): N/A Email: N/A  
Address: 6568 GARRONE AV.  
City: NEWARK, State: CA Zip: 94560

☐ Yes, I would like to be added to your mailing list to receive newsletters, information mailings, and meeting notices.

Please note which issues regarding the project you would like to see addressed in the EIR/EIS, and any other issues related to the scoping process.

☐ I wish to withhold by name and address from public disclosure.

THANK YOU FOR THE PRESENTATION ON OCTOBER 9, 2002 IN BRENTWOOD.

I LOOK FORWARD TO MY QUESTIONS BEING ADDRESSED IN THE SDIP EIR/EIS.\*

- 1.) WHAT ASSURANCES WILL SDIP PROVIDE THAT KINGS, EUCALYPTUS & WIDDOWS ISLANDS WILL BE PRESERVED AND PROTECTED FROM FURTHER DEMISE?
- 2.) WHAT MEASURES AND METHODS WILL BE USED TO RESTORE THIS HABITAT?
- 3.) HOW AND TO WHAT EXTENT WILL SDIP PARTNER WITH THE DCI TO DRAW ON THEIR EXPERIENCES AND THE EXPERTISE OF THEIR PARTICIPATING ENGINEERS?
- 4.) WILL SDIP EVALUATE AND PRESENT DATA ON LEVEE SETBACKS ON VICTORIA ISL.?
- 5.) HOW CAN DREDGING WEST CANAL NOT FURTHER IMPERIL THESE ISLANDS TO SUBSIDENCE WITHOUT PROTECTING UNDERWATER EMBANKMENTS WITH MORE THAN BENCHES?
- 6.) WHAT OPERATING POLICY CAN SUPPORT 8,500 CFS PUMPING WITH AVERAGE DIVERSION CAPACITY PRESUMED ABOUT 5,500 CFS AND HOW WILL CHANNEL VELOCITIES BE IMPACTED?
- 7.) WILL SDIP ADDRESS CONCERNS OF MY 12/9/99 LETTER AND ASSURE MAINTENANCE?

Thank you for participating in this important process. Please submit this form to a project representative by October 31, 2002, to ensure that your comments are considered for the EIR/EIS. If mailing, please send to: Mr. Paul Marshall, California Department of Water Resources, Bay-Delta Office, 1416 Ninth Street, P.O. Box 942836, Sacramento, CA 94236-0001

\* PLEASE REFER TO THE TWO PAGES OF BULLETS FOR BACKGROUND TO MY QUESTIONS AND TO THE OTHER ATTACHMENTS FOR ADDITIONAL REFERENCES.

The following bullets are provided as factual background relevant to the SDIP scoping process. The information/data presented here is presumed accurate unless SDIP refutes it and can demonstrate otherwise.

October 29, 2002

. In relation to the channel widths in West Canal, the downstream reach of Old River, from the right hand bend two-thirds of a mile north of the confluence of Italian Slough northward (downstream) to Woodward Canal and Indian Slough, is generally twice as wide and thus conveys twice the volume of water.

. West Canal was formed by two distinct dredger cuts: The first, on Victoria Island, created Widdows and Kings Island from oxbows of Old River in San Joaquin County. (Eucalyptus Island was cut from the Byron Tract in Contra Costa County). The second, from a portion of Byron Tract (now the forebay), formed Coney Island in Contra Costa County.

. West Canal was dug as a navigation aid for sugar beet barges bound for the Tracy refinery long before the State Water Project.

. West Canal was neither designed nor engineered to convey the reverse flows that draw the more voluminous downstream portions of Old River through its constraints as the final reach to the intakes of Clifton Court Forebay.

. ISDP proposed that for the dredging component; "The potential for levee instability would be alleviated through the adherence to the following design criteria: limiting removal of material to the center two-thirds of the width of the existing channel; maintaining a minimum side slope of 3:1 along the new cross sections; and designing series of benches for the new cross section." (ISDP Vol. 1, 2.2.2, 2-7.)

. Elevation in West Canal at Kings Island is minus twenty five feet and is minus twenty for half the channel width. (DWR cross section.)

. Existing wind fetch and boat wake conditions do cause rip-rap to sluff down levees of 3:1 slope in many areas including Kings Island.

. "Based on detailed modeling results to date, the additional intake could divert a peak flow of 30,000 cubic feet per second (cfs) during the flood tide and an average flow over the tidal cycle of about 10,000 cfs. Current peak flow diversions are limited to 15,000 cfs." at the existing Clifton Court Forebay intake. (ISDP Vol. 1, 2.2.1 New Intake Structure, 2-7.)

. "It is anticipated that both dredging and setback levees would be required in West Canal and on Coney Island to utilize the full pumping capacity at Banks Pumping Plant and avoid scouring the channel." (ISDP Vol. 1, 3.6 ISDP With An Expanded Existing Intake, 3-36, 13-30 & S-27.)

. CALFED's programmatic EIR/EIS recognizes the habitat values and importance of the delta's in-channel islands to ecosystem restoration. (excerpts from the Association of Bay Area Governments funding proposal)

. Mitigation proposals for in-channel islands in ISDP recognized only the unnamed islands across from the initially proposed Northern Intake site and at Woodward Canal. (ISDP Vol. 1, 10-42 to 44 & S-19.)

. The Delta In-Channel Islands Work Group (DCI & DICI) is a multi-agency work group, formed more than six years ago, working to protect and enhance the Delta's In-Channel Islands.

. The DCI, through the San Francisco Estuary Project, has received CALFED funding and implemented several demonstration projects in the Delta with Project Coordinator Kent Nelson, DWR.

. An inventory of the Delta's In-Channel Islands is a current work in progress for the DCI. (memo from Chris K. Kjeldsen, Prof., Sonoma St.)

. There are numerous in-channel islands within the SDIP project area, some breached and flooded, some tidal, some with development for recreation, and all affected by erosion, scouring, and subsidence.

. Widdows, Eucalyptus, and Kings(aka Bra) Islands and their surrounding waterways comprise over one hundred acres of valuable terrestrial and aquatic habitat.

. The stands of Eucalyptus trees, not only provide a rookery for heron and egret species, but together with surrounding ag lands, support several raptor species, both hawk and owl, including the threatened Swainson's hawk.

. Dozens upon dozens of bird, mammal, reptile, amphibian, fish and plant species (hundreds, when insects and spiders are included) abound in this extremely valuable area of habitat. (specifics can easily be provided upon request.)

from the desk of

Bob Groves  
6568 Garrone Avenue  
Newark, California 94560-1111

December 9, 1999

Mr. Stephen T. Bradley, PE  
DWR - South Delta Improvement Team  
1416 Ninth Street  
Sacramento, CA 95814

Dear Mr. Bradley:

Thank you for your presentation on the Department's dredging proposal at the September 22nd S.D.I.T. meeting in Tracy. I'm very enthused to see that the need to identify and remove some of the accumulations of sediment from South Delta channels is being addressed. The problems associated with the siltation issue have long been the topic of some of my past comments to DWR and CALFED.

I was also glad for the opportunity to meet you after the meeting and share some of the areas of my concern. I apologize for not following up sooner, so I'll take advantage of today's meeting for that purpose.

Regarding commercial or marina operations, as I stated at the meeting, I believe that the Lazy M Marina at the head of Italian Slough is silted in and in need of help as much as Del's and Tracy Oasis. I think study would show that Lazy M supports the highest launch count of the three marinas.

I also would like to provide additional detail on the three shoal areas on Old River which are a safety concern as well as a navigational issue. I've provided a figure from the 1996 I.S.D.P. Draft with the shoal areas noted in red along with some photographs. As these shoals continue to grow and constrict navigability, the risk of boating accidents with the potential for loss of life or limb dramatically increases.

As I stated to you after the meeting and also in a previous letter to Stein Buer, the only way to accurately assess these areas is to view them at a minus tide. My commitment to promote such a viewing stands. I'll gladly provide boating access to these areas when it can be scheduled for the time of appropriate tide conditions and will work to coordinate such an event.

I look forward to cooperating with your project so that it comes to fruition and hope that my areas of concern will make it to your list of project objectives.

Respectfully,

Bob Groves  
(510) 793-9283

cc: Stein Buer  
Steve Roberts

VICTORIA

ISLAND

x-11

x-9

-8

Gaging Station

DANGEROUS  
SHALLOWS

OR-8

OR-7

OR-6

OR-5

BM 10

-10

RIVER

Pumping Station

Widdows Island

SAN JOAQUIN CO

SAN JOAQUIN CO

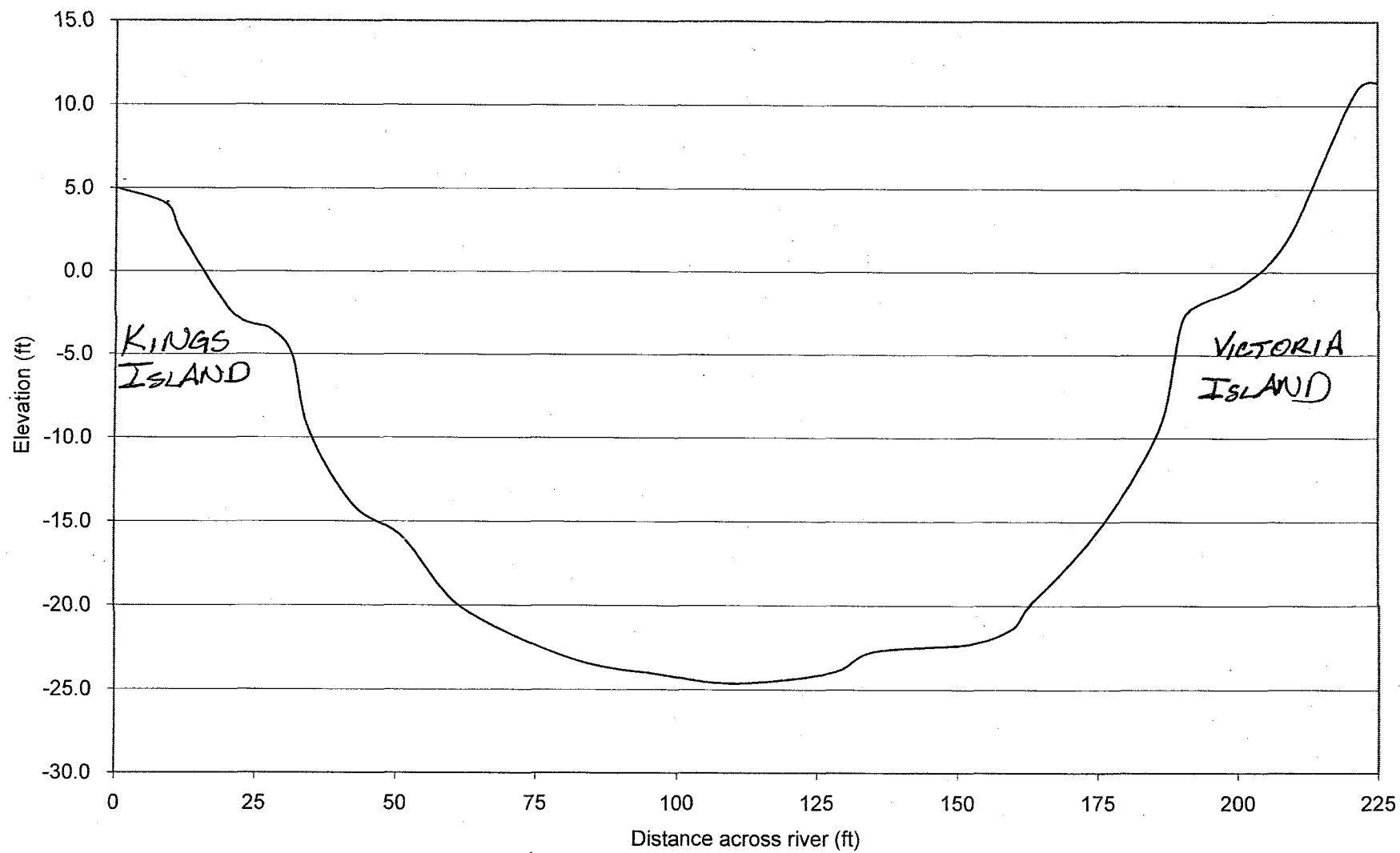
Eucalyptus

Island

Island

ging  
tion

# OR-7 Cross-Section



## **CALFED Ecosystem Restoration Proposal Solicitation May 1998**

### **II. Executive Summary**

**A. Project Title:** Demonstration Project for the Protection and Enhancement of Delta In-Channel Islands

**Applicant:** Association of Bay Area Governments (ABAG) for the San Francisco Estuary Project (SFEP)

### **B. Project Description and Primary Biological/Ecological Objectives**

The demonstration project's goals are: 1) to restore and preserve Delta in-channel islands and associated habitats by constructing several small restoration projects that demonstrate and evaluate a variety of biotechnical techniques that can be used for future Delta-wide restoration; and 2) produce a guidebook that will describe the "lessons learned" from the restoration efforts. The San Francisco Estuary Project's Delta Channel Islands work group is sponsoring this demonstration project and is currently carrying out its design and permitting phase - funded by CALFED through a contract with the National Fish and Wildlife Foundation. The work group will continue in an oversight role to provide advice, technical expertise, and review during the construction phase of the project.

The balance of natural erosion and accretion of channel islands has been permanently altered due to artificially regulating the hydrology and, hence, the sediment transport dynamics of the watershed. Additionally, channelizing the Delta's waterways with an extensive levee system has accelerated channel velocities and increased scour in many parts of the Delta. Consequently, channel islands erode quickly and rarely re-form. The demonstration project will result in the protection and restoration of tidally influenced Delta habitats with minimization of impact to existing ecological values. Projects completed in 1994 - 1995 on channel islands around Staten Island demonstrated the ability to restore island land mass and accomplish erosion protection, but raised concerns about over-use of "hard" fixes for such purposes. Building on past experience, this project will focus on using biotechnical techniques for preventing erosion, sediment control, land restoration, and revegetation to accomplish rehabilitation objectives. Other benefits on a programmatic level are the implementation of both CALFED's goals, objectives and actions and the Estuary Project's *Comprehensive Conservation and Management Plan* (CCMP).

### **C. Approach/Tasks/Schedule**

The approach is a comparative demonstration project that will evaluate cost effectiveness and different types of bio-engineering materials and construction methods for shoreline protection and erosion prevention on channel islands. The project will educate participants and the general public about the benefits and limitations of the techniques used by producing/distributing a guidebook. Tasks include: construction; maintenance; monitoring; and production/distribution of guidebook. The work group is currently applying for required permits under NEPA/CEQA and is beginning the competitive bid process for hiring design engineers. The work group plans to begin the construction phase in the summer of 1999; carry out maintenance and monitoring phases in 1999-2004; and produce and distribute the guidebook during 2000-2001.

### **D. Justification for Project and Funding by CALFED**

Several of CALFED's priority species - Chinook salmon, Delta smelt, Longfin smelt, Sacramento splittail, migratory songbirds, shorebirds, and waterfowl - will benefit from the preservation and enhancement of channel island habitat. According to CALFED's *Ecosystem Restoration Program Plan, Volume I*, "Many of the Delta channels and their midchannel islands and shoals are changing rapidly because of increased wakes from boats



and changes in water velocities." The proposed project's objective is to develop a "suite" of techniques which may be used by agencies, landowners, and non-profit groups to carry out CALFED's *Ecosystem Restoration Program Plan* to "protect existing mid-channel islands and shoals in order to provide high-quality habitat for fish and wildlife dependent on the Bay-Delta." (page 10, Executive Summary and Tables, 4/97); and under Targets, "maintain existing channel islands and restore 50 - 200 acres of high value islands in selected sloughs and channels in each of the Delta's ecological units (200 to 800) acres total." (page 23, Executive Summary).

#### ***E. Budget Costs and Third Party Impacts***

Total amount requested from CALFED is \$760,790. The total budget for the demonstration project's construction phase, including the work group's share of \$87,818, is \$848,818. The work group already has provided one-time-only funds for project definition, site selection, site inventory (flora/fauna, elevation, soils, etc.), and a conceptual engineering design. The voluntary, consensus-based work group also has provided in-kind services for participation in committees, review of materials, and field trips - about \$100,000 overall. The project will be designed so as to have no adverse impact to ecosystem quality, water quality, water supply reliability, and system vulnerability, and recreation, due to construction methods.

#### ***F. Applicant Qualifications***

ABAG is a joint powers state agency owned and operated by the cities and counties of the San Francisco Bay Region, organized in 1961 to solve environmental, land use, housing and economic development problems. The agency works cooperatively through interagency agreements, and memoranda of understanding with other regional, state and federal agencies. ABAG serves as the Estuary Project's fiscal agent. The Estuary Project is a joint federal/state/local partnership that was established in 1987 under the Clean Water Act's National Estuary Program to develop the CCMP for the Bay-Delta Estuary. The Estuary Project's purpose is to promote effective management, restore water quality and natural resources, while maintaining economic vitality through implementation of the CCMP. SFEP's committees working with agencies, interest groups and consultants have carried out many demonstration projects over the past 10 years to restore and preserve habitat in the Estuary.

#### ***G. Monitoring and Data Evaluation***

The monitoring plan's purpose is to evaluate the demonstration project's technological and environmental merits. It will be submitted for approval to CALFED's CMARP and all data will be made available to the IEP or any CALFED designated entity. The work group will review and evaluate the monitoring findings and other criteria such as costs, ease of installation, permitting requirements, and make recommendations for including the information into the guidebook for distribution to the public. Monitoring is directed at understanding existing and future conditions in the Delta and the mechanisms that contribute to the loss of island habitat.

#### ***H. Local Support/Coordination with other Programs***

The work group has obtained 18 statements of general support for channel islands preservation and enhancement from members of the work group and interested parties (list of signatories attached). Work group members include state/federal agencies, landowners, reclamation districts, environmental and boating groups, and engineering firms. Letters of permission have been obtained from the owners of the project sites. Significant outreach has been accomplished through regular meetings (meeting materials are sent to over 100 interested parties), newsletter and print media articles. Similar projects are discussed at meetings and provide a method for exchanging information, receiving feedback and providing advice on the project.

#### **IV. Project Description**

##### **A. Project Description and Approach**

Delta channel islands provide habitat for many special status species and are an important fish and wildlife habitat resource as well as providing other valuable functions, such as recreational, aesthetic and levee protection benefits. The San Francisco Estuary Project's Delta channel islands work group is sponsoring the demonstration project over a two-year period to promote better understanding of the suitability and usefulness of various alternative bio-engineering materials and construction techniques in the preservation, restoration and enhancement of channel islands. The demonstration project will develop a "suite" of techniques which may be used by agencies, landowners and non-profit groups to carry out the CALFED *Ecosystem Restoration Program Plan* to "protect existing mid-channel islands and shoals in order to provide high-quality habitat for fish and wildlife dependent on the Bay-Delta".

The primary objective of the demonstration project is to learn from and build on the work of many others by providing an assessment of proposed sites and conceptual designs for stabilizing islands in the Delta with an emphasis on bio-engineering treatments that improve riparian and aquatic habitat. The approach is a comparative demonstration project using several different types of bio-engineering materials to evaluate construction methods and techniques of shoreline protection and erosion prevention on in-channel islands. The project entails several steps that already have been completed or are in progress including: 1) pre-evaluation of the project sites and base-line habitat valuation (completed); 2) design of a shoreline protection and habitat enhancement component (in-progress and funded by CALFED through a National Fish and Wildlife Foundation contract); 3) environmental review and permitting for the project (in-progress under NFWF); 4) construction/installation; 5) monitoring of the various techniques; 6) evaluation and analysis; 7) maintenance of demonstration projects; and 8) preparation and distribution of a guidebook for future projects based on the evaluation and analysis of the techniques. The work group is requesting funding for Steps 4) through 8) of this project.

##### **IV. B. Scope of Work**

The proposed scope of work involves the following elements: construction; monitoring; evaluation of techniques used and their cost effectiveness; maintenance for at least one year; and production and distribution of a guidebook with lessons learned. The work group has identified candidate islands and the sites represent a wide range of field conditions focusing on both habitat and engineering considerations. A variety of innovative biotechnical methods will be used to achieve restoration goals and demonstrate techniques. Example materials are coconut fiber products, brush boxes, live and dead woody stems, pilings and similar structures. Installations will include construction on land and in water and will require appropriate environmental analysis.

##### **Task I. Construction**

###### **Subtask A. Administrative/Technical Support for Work Group**

The Project Coordinator will develop and distribute meeting agendas, materials, summaries; assist with writing quarterly reports, final reports, and decision memoranda; assist with preparation of presentations to CALFED and other appropriate audiences on the progress of the demonstration project; submit draft and final contract and draft and final subcontracts for approval; and provide oversight of construction contractors, facilitate concerns between work group and contractors. Engineering consultants will provide oversight of construction sites. A contingency fund of ten percent is needed for unanticipated costs due to delays.

###### **Schedule: Meeting organization and distribution of materials**

(at least 6 meetings annually)

July 1999 - Jan. 2001

Completion of contracts and subcontracts, submitted  
for review to NFWF

July 1999 - June 2000

**Schedule:** Admin./Tech support provided

June 2000 - Feb.2001

**Deliverables:** Guidebook produced and distributed to public.

**Estimated Budget:**

Project Phase & Task	Direct Labor Hours	Direct Salary & Benefits	Overhead Labor (General Admin & Fee)	Service Contracts	Material & Acquisition	Misc. Travel Printing Supplies	Costs
Task IV. Guidebook							
Subtask A. Write guidebook				\$20,000.			\$20,000.
Subtask B. Develop graphics				\$ 6,000.			\$ 6,000.
Subtask C. Print drafts/final						\$12,500.	\$12,500.
Subtask D. Internet		\$ 4,000.					
		\$ 4,000.					
Subtask E. Admin/Tech							
Proj. Coord.	280 hrs			\$ 8,500.		\$ 1,800.	\$10,300.
Accnt. Suppt.	280 hrs	\$ 9,400.	\$4,600.				\$14,000.
Task IV. Subtotal	560 hrs	\$13,400.	\$4,600.	\$34,500.		\$14,300.	\$66,800.

**IV. C. Location/Geographic Boundaries**

The work group has selected four demonstration project sites located within the Central and West Delta Ecological Unit (maps are attached). Little Tinsley Island, San Joaquin County. The demonstration project will take place on 3.5 acres on the eastern portion of the island along 1,500 linear feet of shoreline, where installation of a series of protective measures will allow a comparison of the cost, ease of installation, and effectiveness of bio-engineering construction techniques. The Noble Yacht Group owns the island and written permission for the demonstration project is on file. See maps. Webb Tract Islands, Contra Costa County. The demonstration project will install a variety of techniques on three islands with differing elevation and vegetation type to evaluate cost, ease of installation and effectiveness. Island # 3 has scrub, shrub and palustrine forest, and is 55 ft. by 15 ft.; Island # 10 is a submerged island with little vegetation and is 200 ft by 10 ft.; and Island # 21 is an emergent island with scirpus and is 480 ft. by 80 ft. The Webb Tract Islands are owned by California Dept. of Fish and Game and written permission for the demonstration project is on file. See maps.

**IV. D. Expected Benefits**

**Stressors** - Identified primary stressors include: construction of levees on Delta islands/tracts; dredging activities resulting in loss of in-channel islands; invasive aquatic plants; disturbance caused by human activities such as commercial and recreational boating; loss of shallow water habitat due to channel form changes.

**Affected Species** - These species include: Delta smelt; Longfin smelt; Splittail; Chinook salmon (spring and winter-run); Striped bass; resident fish species; Bay-Delta aquatic food web organisms; Western pond turtle; Shorebird and Wading Bird Guild; Waterfowl; Upland Game Species; and Neotropical Migratory Bird Guild.

**Habitat Types** - The identified primary habitat types include: mid-channel islands and shoals; tidal perennial aquatic habitat; shaded riverine aquatic; and emergent marsh.

**Biological Benefits** - The Delta in-channel islands are the last remnants of Delta native habitat, and have been identified as habitat for many rare and endangered plants, fish, insects, amphibians, and birds. The benefits of the proposed project would be the protection and enhancement of these unveeved, tidal habitat areas from erosion and eventual elimination. The proposal includes a monitoring component, which will identify in a more detailed manner the project benefits. The sites

are independent of other land uses and land forms. The demonstration project will have no adverse impacts to water conveyance, flood control, and land uses, such as agriculture, or recreational activities. More importantly, the proposed project will result in demonstrated methods to stabilize or enhance overall Delta habitat.

Other benefits to third parties on a programmatic level are that the demonstration project carries out both CALFED's goals, objectives and actions and the Estuary Project's CCMP. These efforts implement several actions in the CCMP's Aquatic Resources, Wildlife and Wetlands program areas. The proposal demonstrates coordination and effective collaboration among the participating agencies and interest groups. In addition, CALFED and the Estuary Project support clarifying and simplifying the permitting process of constructing environmental protection and enhancement projects. This project will help meet the streamlining goals for projects on Delta in-channel islands and may demonstrate successful implementation of a § 404 Letter of Permission process (U.S. Army Corps of Engineers).

***Compatibility with Other Non-Ecosystem CALFED Objectives (water quality, water supply reliability, and Delta levee system integrity)*** - Precautions will be taken to use best management practices for preventing erosion and resulting sediment problems. A purpose of the project is to retain on-site sediment to maximize shallow water habitat which will minimize sediment loading in the water column. Additionally, a presumed outcome will be increased deposition of sediment at project sites. One of the benefits of protection and enhancement of Delta in-channel islands is the associated protection from erosion to nearby levees. Thus, the proposed project will support CALFED's goal of providing long-term levee stability.

#### ***IV. E. Background and Biological/Technical Justification***

***Background*** - In 1995, the San Francisco Estuary Project's Delta Geographic Subcommittee determined that there was not consensus on the management of Delta in-channel islands. The committee facilitated a process over the next two years to document the resource problem, institutional and physical impediments to and possible solutions for the preservation and enhancement of Delta in-channel islands. Over 60 people, representing state/federal agencies, local government, landowners, reclamation/flood control districts, environmentalists, scientists, boaters, agricultural interests, and elected officials have participated in the process. They reached consensus on the need for restoring and protecting in-channel islands, agreed upon objectives, and established a work group to carry them out. Meeting regularly, the work group reached agreement on the scope for a demonstration project, selected sites and coordinated early tasks of the project.

***Biological/Technical Justification*** - In-channel islands vary in size and habitat function and value, and in some channels due to their isolation, remain in their historic state. However, in other channels that experience high water velocities due to being a part of the state's water conveyance system, and from heavy use of shipping and boating, the islands are diminishing in both acreage and numbers at a very high rate. (Source: *CALFED's Ecosystem Restoration Program Plan, Volume I*) The ERPP's Implementation Objective, Targets and Programmatic Actions for Midchannel Islands and Shoals calls for "Implementing restoration projects currently proposed in the Delta by resource and cooperating agencies; and Install structures, such as floating booms, to weaken the force of waves to reduce midchannel erosion in sensitive areas." The demonstration project will fulfill the ERPP's Implementation Objective, Target and Action 1A: "Protect and enhance existing remnant channel islands in the Delta; Maintain existing channel islands and restore 50 to 200 acres of high-value islands in selected sloughs and channels in each of the Delta's ecological units; Actively protect and improve existing channel islands in the Delta." The ERPP's Delta smelt Target calls for "meeting the goals of the U.S. Fish and Wildlife Service's *Native Fish Recovery Plan*." The demonstration project will assist in carrying out the Recovery Plan's action to "Develop additional shallow-water habitat, riparian vegetation zones, and tidal marsh." The development and distribution of the guidebook with lessons learned will also implement the

Recovery Plan's call to "Develop a public outreach and education program that increases public awareness of positive effects on healthy fisheries and aquatic habitats." The demonstration project fulfills the Estuary Project's *Comprehensive Conservation and Management Plan* Action AR-4.9: "Promote the maintenance and development of tule islands, tidal wetlands, and offshore berms to protect against erosion and to provide detrital input and juvenile fish nursery habitat." The *Anadromous Fish Restoration Program* states "Improvements to aquatic habitat in the Delta are essential to restore the natural production of anadromous fish in the Central Valley because habitat in the Delta is highly degraded and all species and races of fish use the Delta at some stage in their life history." (See References for page numbers)

**Status** - The proposed multi-phased demonstration project is underway. The first phase was completed by the work group and included the following tasks: project definition; site selection; and the development of a conceptual design. A \$27,000 site inventory and evaluation was prepared by California State University at Sonoma, Spring 1997 and was funded by the Delta Protection Commission. The conceptual engineering design was completed by the U.S. Army Corps of Engineers Waterway Experimentation Station (WES) at a cost of \$3,800 and was funded by the Corps. The second phase tasks include: environmental review/permitting and design development. CALFED through NFWF is providing \$270,090 and the work group is providing \$180,375 for a total of \$450,465 for this phase. The work group is seeking the required environmental documentation, permits and will begin the engineering design and specs soon. The third and final phase tasks include: construction, maintenance, monitoring and the development and distribution of a guidebook with lessons learned.

#### **IV. F. Monitoring and Data Evaluation**

The monitoring plan's purpose is to evaluate the demonstration project's technological and environmental merits. The expected outcome will be the development of criteria and techniques necessary for the achievement of effective resource management within the Delta. The project calls for an "adaptive monitoring" plan that will allow for the maximum use of resources while achieving the documentation necessary for establishing management guidelines. Several different techniques for stabilization will be used and each of these may require different or modified monitoring techniques. The plan will emphasize habitat monitoring, but will be refined through the permitting and consultation process. It may include:

- 1) Physical/technological monitoring of the different stabilizing approaches
  - stable elevation
  - wave reduction at high water conditions and winter storms
  - evaluation of the longevity of structure
  - comparison between structures
- 2) Biological environmental assessment monitoring
  - vegetation
    - species richness, gain or loss of area, establishment or failure of members of the shrub/scrub habitat or palustrine forest habitat
  - fauna terrestrial or above the water
  - fauna subtidal
    - special status species
    - it is known that special status species occur at the project sites and they will be included in monitoring efforts, however, the project's goal is for ecosystem improvement and to look beyond individual organisms

Monitoring will take place for a period of five years and may include permanent photo stations, physical and biological parameters, and will be used in analyzing the effects of techniques used at the demonstration sites for stabilizing the island and facing levee. Biological monitoring may

include: vegetation recovery, benthic organisms occupying the sites, wildlife use, fisheries resources, and if they occur, analysis of the invasion by non-native species. Physical monitoring may include: water level, subsidence, substrate accretion, and wave action. No alternative monitoring methods have been identified. There may be a need to evaluate the project on its "environmental friendliness" and its "recreational/aesthetic friendliness".

At the end of the first full year of monitoring, the work group will review and evaluate the findings, and other criteria such as costs, ease of installation, and permitting requirements to be included in the guidebook. All monitoring data will be made available to the Interagency Ecological Program's monitoring efforts through participating members of the work group's project development subcommittee. The subcommittee will provide general technical expertise, review of data and oversight of the demonstration project. A list of subcommittee members is included in *Section VI - Applicant Qualifications*.

#### ***IV. G. Implementability***

The work group has obtained letters of permission from the following entities: State Lands Commission; California Dept. of Fish and Game (the owner of Webb Tract islands); and Noble Yacht Group (the owner of Little Tinsley Island). The land managers of Webb Tract are fully supportive of actions to protect and enhance the Webb Tract in-channel islands (Contact: John Winther, Delta Wetlands, 510/282-4216). Additionally, the work group has obtained 18 statements of general support for in-channel island protection and enhancement from members of the work group and interested parties (see attached list of Coordination of Efforts signatories). Considerable outreach has been accomplished through the Estuary Project's mailing list, its newsletter and the print media. The work group has met often for the past two-years and the meeting materials are sent to about 100 individuals/entities each time. Attendance at the meeting ranges from 20 - 35 people. The work group's activities have been discussed in articles in the Stockton Record and the Contra Costa Times.

The work group submitted its information at a pre-application meeting with state/federal agencies in April 1998 and is currently in the process of providing additional materials and undergoing review of the demonstration project by the appropriate agencies. By working with state/federal agencies as members of the work group in the site selection and design phase, the work group anticipates the possible use of a § 404 Letter of Permission in obtaining the necessary permits. Regulatory agencies participating in the work group since its beginning are U.S. Fish and Wildlife Service, National Marine Fisheries Service, U.S. Army Corps of Engineers, Dept. of Fish and Game, State Lands Commission and the Dept. of Boating and Waterways. Approvals needed include: Corps of Engineers; Dept. of Fish and Game; State Lands Commission; and the Central Valley Regional Water Quality Control Board.

#### ***References***

- ABAG 1993. San Francisco Estuary Project. Comprehensive Conservation and Management Plan. Oakland, Calif. 86 pp.
- CALFED. 1998. Ecosystem Restoration Program Plan, Volume I. Visions for Ecosystem Elements. Sacramento, Calif. 91-92 pp.
- CALFED. 1998. Ecosystem Restoration Program Plan, Volume II. Visions for Ecosystem Elements. Sacramento, Calif. 48-49 pp. 64 pp.
- U.S. Fish and Wildlife Service. 1995 a. Sacramento-San Joaquin Delta Native Fishes Recovery Plan. U.S. Fish and Wildlife Service, Portland, Oregon. 140 pp.
- U.S. Fish and Wildlife Service. 1995 b. Sacramento-San Joaquin Delta Native Fishes Recovery Plan. U.S. Fish and Wildlife Service, Portland, Oregon. 161 pp.
- U.S. Fish and Wildlife Service. 1997. Anadromous Fish Restoration Program. U. S. Fish and Wildlife Service, Stockton, Calif. 96 pp.

1

November 8, 2001

To "Team Inventory"

Margit Aramburu, Delta Protection Commission; Bob Orcutt, DFG; Kent Nelson, DWR; Richard Nichols, LFR; Ken Kjeldsen, KSN; Rick Morat, USFWS; Evelyn Gulli; Marcia L. Brodbank, SFEP

From: Chris K. Kjeldsen

Re: Sacramento San Joaquin Delta In-Channel Island Inventory

Please review the following for presentation at the next Delta In-Channel Island Workgroup meeting. As per meeting of October 24, 2001, we were charged with preparing a two page scoping document that will be the basis for developing a request for CALFED directed action.

**In-Channel Islands Definition:**

In-channel islands are remnants of the once vast ecosystem of tule marsh wetlands making up the Sacramento San Joaquin Delta. They are relictual fragments that have not been converted to agriculture. These orphan islands within the waterways of the Delta are refugia for the native flora and fauna of the Delta. They are functional parts of a complex, fragile and altered ecosystem. We include submerged shoals with emergent riverine vegetation within this definition

**Background:**

The Delta In-Channel Island Workgroup (DICI) with representatives from state agencies, reclamation districts, engineering and consulting firms, San Francisco Estuary Project, and federal agencies have been meeting regularly since 1995 to address issues related to protection, preservation and rehabilitation of in-channel islands. The DICI workgroup has achieved a new level of interagency coordination and cooperation in focusing on the common goal of protection and enhancement of in-channel islands. Three funded proposals for stabilizing in-channel islands have been implemented through the efforts of this work group: one funded by the Delta Protection Commission and two funded by CALFED Ecosystem Restoration Program. These proposals as pilot studies have developed technological and biotechnical methods for stabilizing and enhancing in-channel islands. The biotechnical treatments include coconut fiber rolls and blankets, willow wattling and brush boxes; floating breakwaters; log cribs; interlocked rootwads, brush curtains and ballast buckets. Baseline inventory of Delta in-channel islands is the next step for achieving the goals of the DICI workgroup and the Ecosystem Restoration Program of CALFED.

**Statement of Problem:**

For the citizens of California the Delta is a significant resource that has a complex and sensitive physical, biological, and political environment. Human impacts have altered the Sacramento San Joaquin Delta and it is anticipated that they will intensify in the future, raising vexing questions as to the allocation of limited resources for the maintenance of the multiple uses and functions of the Delta. We submit that the in-channel islands are keystone elements of the Delta that are functioning as refugia for a once vast complex ecosystem. The in-channel islands as refugia hold the key elements for ecosystem restoration.

The relict in-channel islands of the Delta are small and scattered remnants of the original Delta. It has been shown that in-channel islands have disappeared as a result of erosion. Existing in-channel islands

are eroding and the normal processes of accretion are unable to balance losses. Many of the waterways of the Delta and their associated in-channel islands due to increased wave activity and changes in water flow with water diversions are in a dynamic state of change.

These in-channel islands as relictual refugia are not well mapped, their rate of erosion is not known, and their flora and fauna are unmapped. It is recognized that these in-channel islands are valuable relicts of a complex and highly modified system. These in-channel islands are of value not only due to their relatively unaltered state but also because of their continuity and connections within the system of the Delta (i.e., there is free access, through the waterways, to all parts of the system for emigration and immigration, there is unimpeded water flow with runoff and tidal cycles, and the direct relationship to the aquatic environment through providing shade and allochthonous material) unobstructed by artificial barriers. They are also of importance because of their high value as habitat for fish, plants, wildlife, and their role in protecting man-made levees from erosion.

#### **Statement of Need:**

The in-channel islands of the Delta have not been mapped or inventoried. The identification and prioritization of threatened critical habitat associated with these islands will provide decision makers with objective information for the prioritization of ecosystem restoration work and the development of a management plan to protect the remaining in-channel islands. The inventory will provide:

- 1) Accurate GPS maps of the in-channel islands including below water bathymetry;
- 2) Analysis of their substrate, hydrology and vulnerability to wave fetch erosional energy;
- 3) Mapping of the flora and fauna; and
- 4) Analysis and ranking of the wildlife habitat.

Conservation for biodiversity independent of humanity's needs for the provision of goods, basic life-support services and human enjoyment of nature and recreation presents conflicts for system management. A well-integrated scientific framework for weighing the merits of biodiversity needs and humanity's needs is key to decision-making. A baseline inventory is a critical foundation for Delta management and restoration.

The need is based on the assumption that differences exist in the quality of habitat on in-channel islands and along the interface between the islands and the aquatic habitat. The need is also based on the consensus that in-channel islands represent the best "library" of information concerning the Delta and that with present water management and recreational use the in-channel islands are threatened.

#### **Hypothesis for Delta In-channel Island Inventory:**

In-channel islands that are highest priority candidates for enhancement and stabilization are those without a built environment, with a maximum size, with an elevation of at least + 4-feet above the mean low tide line, with special-status species, with few invasive species, and with a diversity of habitat types ranging from aquatic bed to palustrine forest.

This hypothesis is based on the following assumptions:

- 1) Scale of in-channel islands is directly related to their value to the Delta system;
- 2) Temporal changes are impacting in-channel islands including: erosion, introduction of non-native species, water level and modification of natural fluvial processes;
- 3) Location within the Delta relates to in-channel island function; and
- 4) The genetic potential of the biological resources of the assemblages present represent the key elements for restoration of Delta function.



**Summary of Delta In-channel Inventory Research Approach:**

The project will be completed using aerial photograph interpretation and GPS techniques, ground truthing and standard biological techniques for the flora and fauna. The project will address the following "information gaps":

- 1) Is the wildlife habitat of the in-channel islands significantly different in different situations;
- 2) Is there a difference in aquatic habitat values of in-channel islands;
- 3) What criteria are indicative of the best opportunities for protecting, enhancing and or stabilizing these remnants of the original Delta.

The following tasks will be accomplished

1. Mapping of existing in-channel islands;
2. Analysis of physical and hydrological features of the in-channel Islands;
3. Mapping and analysis of the Vegetation Habitat Type on each Island;
4. Special status species will be documented when and where they are encountered;
5. Avian Fauna will be documented when and where they are encountered;
6. Vertebrate Fauna will be documented when and where they are encountered; and
7. Analysis and documentation of the occurrence and ecological effects of non-native species associated with in-channel islands.

**Key Words: Inventory, Sacramento-San Joaquin Delta, In-channel Islands, Refugia, and Relict Islands**